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ABSTRACT

Critical review of previous techniques for the measurement of an individual's self-concept (SC) is a necessary prelude to the development of more adequate methodologies. This paper focuses on recent methodological innovations in the study of the self, namely, those derived from cognitive social psychology. A view of the self as a cognitive structure residing within a person's semantic memory allows the introduction of techniques originally used in experimental cognitive psychology to the study of the self. Multivariate techniques, including cluster analysis and multidimensional scaling, offer potential for the study of the structure and content of an individual's SC. Of interest is the application of such experimental and statistical methodologies to the temporal variation in an individual's view of self. Reliable differences in the structure and content of the "now" self, the "possible" self, and the "ideal" self may be discerned by application of these techniques. Such techniques can also be applied to the evaluation of interventions designed to alter or restructure SC. They also hold promise for innovations in the provision of feedback to clients in the course of counseling and psychotherapy. The influence of individual difference variables such as self-monitoring or self-consciousness are examined to determine the conditions under which any measurement technology can be expected to yield interpretable results. One of the most perplexing problems encountered with any attempt at a structural representation of SC involves the selection of a stimulus set that can adequately represent its complexity. Adjectives found in the 80 scales listed by R. R. McCrae and P. T. Costa (1985) constitute an excellent summary of trait adjectives that could be used in a multidimensional scaling investigation of SC. (Author/RLC)

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METHODOLOGICAL ADVANCES IN THE STUDY OF SELF-CONCEPT

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ABSTRACT

Critical review of previous techniques for the measurement of an individual's self-concept is a necessary prelude to the development of more adequate methodologies. Primary emphasis will be given to recent methodological innovations in the study of the self, particularly those deriving from cognitive social psychology. A view of the self as a cognitive structure residing within a person's semantic memory allows the introduction of techniques originally employed in experimental cognitive psychology to the study of the self. Multivariate techniques, including cluster analysis and multidimensional scaling, offer potential for the study of the structure and content of an individual's self-concept. Of particular interest is the application of such experimental and statistical methodologies to the temporal variation in an individual's view of self. Reliable differences in the structure and content of the "now" self, the "possible" self, and the "ideal" self may be discerned by application of these techniques. Such techniques can also be applied to the evaluation of interventions whose intended goal is the alteration or restructuring of self-concept. They also hold promise for innovations in the provision of feedback to clients in the course of counseling and psychotherapy. Finally, the influence of individual difference variables such as self-monitoring or self-consciousness are examined with the purpose of delimiting the conditions under which any measurement technology can be expected to yield interpretable results.

INTRODUCTION

Traditional investigations of self-concept have largely derived from drive-theoretic and psychodynamic conceptions of personality. The seminal contributions of Murray (1938) and Sullivan (1953) largely represent these viewpoints. More recent contributions have emphasized the role of cognitive structures and processes in the development and change of an individual's self-concept. Historically, contributions from social psychology (Allport, 1961) have been instrumental in promoting this change. A concern with both structural and procedural aspects of personality forms a close parallel with recent advances in cognitive psychology as well. Thus, cognitive social psychology has emerged as a vigorous area of theory and research involving self-concept. A brief review of the foundations of this movement will provide a prelude for a more detailed discussion of methodological advances which have proceeded from its influence.

This distinction between structure and process is fundamental to the information-processing framework which has emerged in experimental cognitive psychology (Posner, 1989). Structural aspects of cognitive representations are commonly thought of in terms of declarative knowledge. Such knowledge constitutes the facts, concepts, and principles which form the fundamental basis of human cognition. As such, a structural focus takes as its primary emphasis the "states of mind" which characterize human mental activity. A focus on process takes as its focus changes in these states, changes which derive from the manipulation of declarative knowledge in activities such as problem solving. This "procedural" knowledge, then, forms the "how" of cognitive task performance, while declarative

knowledge forms the "what" of this activity. These two types of knowledge have been widely accepted as basic aspects of the human information processing system.

Direct correspondence with the concerns of personality theory can be made with respect to this basic distinction between declarative and procecural knowledge. Declarative knowledge may be conceptualized as the distinctive and stable traits which describe an individual's self-concept, while procedural knowledge forms the basis for the expression of these dispositions within a given situational context. While it is clear that both structure and process are vital to any complete discussion of self-concept, at least two arguments can be marshaled for an initial focus upon structural aspects. Structure possesses a certain logical primacy in that any focus on change must necessarily presuppose knowledge of what it is that has changed. Given that structure is identified with states of mind, the identification of change in those states must necessarily proceed from a careful analysis of their structure. Structure also enjoys a psychological primacy in that clear knowledge of its constituents will enable perception and action (process) to proceed unimpeded. Such a "need for structure" is an integral part of Kruglanski's (1989) theory of lay epistemology. From the perspective of cognitive social psychology (Zajonc and Markus, 1985), cognitive structures are essential to our representations of events and objects, with the self-concept being only one of the many instantiations of this principle.

STATISTICAL ANALYSIS OF STRUCTURE: FACTOR ANALYSIS AND SCALING

The primary focus of this paper, then, derives from a concern with the structure of an individual's self-concept, with the structure of the cognitive representation of self. Traditional methodological approaches to the investigation of structure have employed the statistical techniques of factor analysis. In particular, *exploratory* factor analysis has sought to discern the number and nature of the factors which best describe the intercorrelations among a set of variables. Nunnally (1978) suggests that all personality scales be routinely subjected to this procedure before their subsequent empirical testing by researchers. The work of Marsh (1987) strongly attests to the utility of this suggestion. While factor analysis is certainly useful in the structural investigation of self-concept, another data analytic technique has evolved in recent years which offers several advantages *vis a vis* factor analysis.

Multidimensional scaling (MDS) is also able to extract a precise mathematical description of structure from subjects' data, but has several advantages over factor analysis. This technique is applicable to a wider variety of data, provides lower dimensional solutions, and is primarily concerned with spatial representation. MDS operates directly upon similarity ratings generated by individual subjects. Each person is asked to assess the similarity between all possible pairs of stimuli which form the set of interest. Here lies a fundamental difference with factor analysis in that MDS procedures substantially reduce the likelihood of experimenter bias. Factor analytic procedures typically rely upon data generated by scores derived from a predetermined list of attributes. Additionally, the endorsements

required of subjects in traditional personality inventories are subject to faking, a response which is much less likely with the similarity ratings in an MDS task. Subjects' ratings for MDS are subjected to a correlational analysis which seeks to determine an appropriate number of dimensions that can be used to summarize them. A more parsimonious interpretation is usually achieved, relative to the proliferation of factors possible with factor analysis. Finally, the visuo-spatial display offered by MDS may be particularly valuable in providing feedback to individuals about their progress in educational or psychological programs. More detailed information related to MDS may be gathered from Schiffman, et. al. (1981) and Young and Hamer (1987).

MULTIVARIATE ALTERNATIVES TO MULTIDIMENSIONAL SCALING

It is important to note that the similarity judgments required of participants in MDS tasks result in proximity measures which are considered to be symmetric. Such an assumption directly mitigates against the representation of possible superset or subset relations among regions of an individual's self-concept. In an attempt to review suitable methodologies for the study of self-concept structures, it is necessary to include those which address this possibility. Recent work by both Marsh (1987) and Rosenberg (1988) posit a hierarchical relationship among aspects of an individual's self-concept. Marsh (1987) believes that the general self-concept of students, for example, must be divided into both academic and non-academic self-concepts. Each of these regions, in turn, are composed of finer divisions in a descending hierarchy which becomes more

specific in its lower reaches. Rosenberg (1988) has developed a *set-theoretic* model of self-concept which assumes two hierarchical structures of classes or sets, one for ego (view of self) and alter (view of others) elements, another for attributes of perception and affect which are associated with these elements. Subset and superset relations can be specified among each of these classes by means of a computer algorithm (HICLAS) written for this purpose. These efforts at further specification of the structure of self-concept are important elaborations of the basic emphasis on structure given by MDS and traditional factor analytic techniques.

NOMOTHETIC AND IDIOGRAPHIC TAXONOMIES OF STRUCTURE

One of the most perplexing problems encountered with any attempt at a structural representation of the self-concept involves the selection of a stimulus set which can adequately represent its complexity. This is especially important for a MDS analysis as the configuration of dimensions and stimuli derived from this procedure is critically dependent upon the initial set of stimuli rated by the participants. In an effort to provide a range of trait descriptors which is maximally able to accommodate the range of self-concept descriptors, it is useful to consider the five-factor model of personality recently advocated by McCrae and Costa (1985). In their attempt to derive a taxonomy of personality dimensions from the vast repertoire of descriptors in the English language, these investigators have repeatedly found support for a five factor solution. Neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience are the factors so obtained. For our

present purposes, however, the labeling of these factors is of less importance than the specific adjective scales which were used in their derivation. McCrae and Costa (1985, Table 4) provide a listing of the 80 scales which were judged by their participants. The adjectives in these scales constitute an excellent summary of trait adjectives which could be used in a MDS investigation of self-concept.

Although the five-factor model of personality offers an excellent start toward a universal taxonomy of trait descriptors, its nomothetic character may neglect the unique and idiosyncratic nature of any given individual's self-descriptions. A more idiographic method of generating trait descriptors may therefore be preferred by investigators who are wary of the limitations of the reactive methods implied by such a nomothetic framework. Two recent innovations in this regard are represented by the work of McGuire and McGuire (1982; 1988) and Higgins (1987). The former authors have employed a "spontaneous trait generation" task in which their participants provide noun and verb responses to open-ended queries about themselves. A content-analysis of these reponses is then conducted as a data-aggregation procedure prior to the application of inferential techniques. Higgins (1987) utilizes a "Selves" questionnaire in which participants are asked to record up to 10 traits for each of a number of various self-states (actual, ideal, and ought). These traits are elicited from the participants' viewpoint as well as the assumed viewpoint of significant others in their social environment (parents, peers, teachers). A particularly interesting aspects of Higgins' analysis is his attempt to achieve a correspondence between various discrepancies of self-states and emotional reactions. Self-generated

traits achieved by either of these methods could easily be incorporated into a MDS analysis which sought to represent their underlying structure.

INDIVIDUAL DIFFERENCES IN THE STRUCTURE OF SELF-CONCEPT

Although the self is frequently implicated as a significant factor in the information processing paradigm of cognitive social psychology (Kihlstrom, et.al. 1988), several theoretical constructs posit observable individual differences in the extent to which it mediates behavior. Concurrently, these approaches carry implications about variations in structure and content of the self-concept between identified subgroups. Self-monitoring theory (Snyder, 1987) is but the most recent example of this trend. *Low self-monitors* are said to be less sensitive to social contingencies, responding primarily to their views of themselves. Consequently, their self-images are thought to be more highly developed and articulated. *High self-monitors*, conversely, are highly sensitive to social cues and guide their behavior accordingly. They apparently possess rich, highly articulated images of other people relative to their *intra*individual images. Self-consciousness theory (Fenigstein, Scheier, & Buss, 1975) is another attempt to specify individual differences in self-focus. *Private self-consciousness* is thought to relate to the extent to which an individual engages in introspection. Ostensibly, such a disposition should result in a more highly articulated personal identity or self-concept. *Public self-consciousness* refers to a predisposition to focus upon one's self as a social object. As a consequence, the social identities of high public self-conscious individuals should be more

extensively elaborated. Although both self-monitoring and self-consciousness are conceptually important from the standpoint of individual differences in self-concept, it is the latter theory which has received greater scrutiny in the empirical literature.

In the fifteen years since its introduction, the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975) has generated numerous studies of its psychometric and psychological properties. Consequently, no attempt will be made here to exhaustively review the allied literature. Of primary importance for the present discussion are the implications of this scale for the identification of groups of individuals who differ with respect to their self-structure, both in content and dimensionality. It is important to note that public and private self-consciousness are not considered to anchor a bipolar dimension such as "public-private". Scheier and Carver (1981) maintain that these two qualities constitute separable dimensions: low and high private self-consciousness and low and high public self-consciousness. Thus, four distinct groups may be discerned: low public, low private; high public, high private; low public, high private; and high public, low private. Membership in these groups appears to have certain consequences for information-processing related to self-structures. For example, the recall of self-relevant information appears to be influenced by self-consciousness. Agatstein and Buchanan (1984) asked their participants to rate a set of 36 adjectives on one of three dimensions: private, public, or non-self-reference. Subsequent recall of these adjectives was enhanced if the rating conditions matched the self-consciousness of the participants. It is particularly interesting to note that the self-concepts of high

public/low private and high private/low public individuals were especially effective in promoting this pattern of recall results. The possibility that public and private self-consciousness is associated with better articulation of the respective self-schema is supported by the recent work of William Nasby (1989). That is, both public and private aspects of self-schema can be articulated, with scores on the Self-Consciousness Scale predicting which of these aspects are more detailed.

PUTTING IT ALL TOGETHER: STRUCTURAL STUDIES OF CONSCIOUSNESS

Although there is a wealth of indirect evidence about the information-processing consequences of self-structure (Agatstein and Buchanan, 1984; Nasby, 1989; Snyder, 1987), little effort has been expended in direct specification of the content and structure of the cognitive representations which presumably underlie such effects. One such study which did so is that of Partington (1970). This author used MDS in a successful effort to identify self-perceptions. Clustering algorithms of self-descriptive adjectives indicated that alcoholics viewed themselves as different people when intoxicated than when sober. A two-dimensional representation of alcoholics' ratings placed their "high self" and "sober self" within different quadrants. A similar mapping of student ratings did not show such a separation. When compared with dimensions extracted from the student ratings, the results of the alcoholics also appeared less stable. This study forms a close parallel with the concerns of the present author in the effort to achieve some common ground for description among current conceptualizations of self-concept.

Various regions or "subselves" have long been postulated within the overall domain of the self-concept. Higgins (1987) assumes the existence of "actual", "ought" and "ideal" selves. Markus and Nurius's (1986) work on "possible" selves is yet another instance of this effort to subdivide the self-concept. Work is currently under way by the present author in an effort to experimentally verify the separability of these regions. A given set of trait descriptors will be compared under experimental manipulations designed to elicit definable regions of an individual's self-concept. Subjects will be asked to rate the similarity of items in the trait set to their "now" self, "possible" self, or "ideal" self. If sufficiently separable configurations of the adjectives are obtained under these three conditions, such a result would constitute experimental verification of the existence of such regions. Additionally, it is expected that individual differences in self-consciousness will affect the content and configuration of self descriptors. It is anticipated that such work will begin to meet the challenge implied in the following statement:

> "Just as semantic memory contains generic information about the facts of the world, the meanings of words, the properties of common objects, and the attributes of specific individuals and wider social categories, so it must contain generalized representations of oneself. . . It remains to be seen if the schema for self is qualitatively different from schemata for others; and the details of the structure of the self-schema need to be specified more clearly. . . it is possible that the self is not a monolithic cognitive structure but that there are many 'selves', and thus many self-schemata, corresponding to different roles or social situations, represented in the cognitive system."
>
> Kihlstrom (1981, pp. 135-136)

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